# AGONISTIC HUMAN MONOCLONAL ANTIBODIES AGAINST DEATH RECEPTOR 4 (DR4)

## REFERENCE NUMBER
E-158-2010

## PRODUCT TYPE
- Therapeutics

## KEYWORDS
- Therapeutic
- cancer
- antibody
- mAb
- death receptor
- DR4
- TRAIL

## COLLABORATION OPPORTUNITY
This invention is available for licensing.

## CONTACT
John D. Hewes
NCI - National Cancer Institute
240-276-5515

John.Hewes@nih.gov

## DESCRIPTION OF TECHNOLOGY

The National Cancer Institute is seeking parties interested in co-developmental, collaborative research human monoclonal antibodies (mAbs) that bind to death receptor 4 ("DR4").

The tumor necrosis factor (TNF)-related apoptosis-inducing ligand (TRAIL) and its functional receptors, DR4 and DR5, have been recognized as promising targets for cancer treatment. Therapeutics targeting TRAIL and its receptors are not only effective in killing many types of tumors but they also synergize with traditional therapies, and show efficacy against tumors that are otherwise resistant to conventional treatments.

Researchers at NCI have developed two human monoclonal antibodies (mAbs) that bind to death receptor 4 ("DR4"). One of the mAbs is agonistic and inhibits the growth of ST486 cells with IC50 of about 10nM. The two mAbs were selected from a human phage-displayed Fab library by panning against

a recombinant DR4 extracellular domain. Therefore the two mAbs are fully human. These antibodies could have considerable potential as cancer therapeutics alone or in combination with other drugs. Further, these antibodies could be used as a research tool for the study of DR4.

## POTENTIAL COMMERCIAL APPLICATIONS

- Cancer therapeutics. Ongoing clinical trials with mostly DR5-targeting agonistic antibodies have indicated that they could be safe and efficacious for certain indications.
- Tools. Antibodies to study DR4 expression in a broad range of solid tumors and malignancies.

## DEVELOPMENT STAGE

- Pre-clinical (in vivo)

## PUBLICATIONS

Feng Y, Xiao X, Zhu Z, Dimitrov D. Identification and characterization of a novel agonistic anti-DR4 human monoclonal antibody. MAbs. 2010 Sep-Oct;2(5):565-570. [PubMed: 20581445]

## PATENT STATUS

- **U.S. Filed:** U.S. Provisional Application No. 61/355,449 (6/16/2010)